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AN INTRODUCTORY LECTURE DELIVERED BEFORE THE MEDICAL CLASS OF HARVARD UNIVERSITY, NOV. 2, 1870.

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GENTLEMEN OF THE MEDICAL AND DENTAL SCHOOLS:—

WITHIN the last few weeks many of the great cities of the civilized world have seen assembling within themselves many thousands of young men, drawn together by one common purpose, the same which brings you here to-day; some from the adjoining recitation room only; some back again after a period of quiet reading and resting in country homes, eager to renew old acquaintanceship and curious to study the faces of those who are to be your fellow students during the coming winter; some fresh from college or other preparatory school, it may be the field or workshop, to hear for the first time a lecture upon the profession you have chosen for the study and work of your lives. The pleasant task of first addressing you, of bidding you heartily welcome to these halls and to your teachers, has fallen to the lot of one of the youngest of them, who has not had time to forget his own first impressions of student life, its expectations and dissatisfactions; who hopes to be able still to speak to you simply as a fellow-student, only a little farther advanced along the path you are just entering.

I will not question the motives which have led you to choose medicine as your profession; it would be perhaps impossible for most of you so to analyze them as to give a reason for your choice satisfactory even to yourselves. During the sophomore and junior years there seems to spring up among undergraduates across the river a wide-spread passion to study medicine. It obtrudes itself in the form of half-dissected cats and their distorted skeletons, of unpleasant emanations and unexpected explosions within the Rumford rooms (or did in my day), in half-whispered accounts of visits to the operating theatre on Saturdays and entire silence with regard to the illustrations of syncope furnished the class while there. But these are exhibitions of a merely passing fancy, and the men who show the strongest manifestations of it seldom come here as students after graduating. It is not to be expected that you have chosen understandingly; you may have been drawn to it instinctively, or because a love of botany or partially developed taste for chemistry or zoölogy has guided you, but it is impossible that you should, even in a faint degree, comprehend all the difficulties and delights, the grandeur and the gravity of the study of medicine, until you are fully engaged in it, until it has completely possessed you. It is for this reason that counsel from those older than yourselves is valuable at this important period of your lives, that you may know in what spirit you are to begin, and after what method you should pursue, the study of this unknown object of your immediate future.

Fortunately we can go but a little way in the study of any of the branches of natural science, before that spontaneous and inevitable enthusiasm for the subject is developed, which attends the true student through life. Nature rewards those who thus love and woo her, with this spirit abundantly. It is the most prominent characteristic of all eminence in science; it permeates the whole existence of the real masters and teachers of our art, and radiates upon all who come within their influence a kindred glow and devotion. Recognize and cherish its first impulses in each other and yourselves therefore. It will strengthen by encouragement, it may be killed in the bud by a laugh or a sneer. It is the fashion in some places to deride it and its manifestations, if they seem a little above or outside the ordinary worldly or practical motives of action, and fashion is often mighty in such matters. It may crush out all the lofty and generous impulses in a generation, or

in a community, or in a school of young men. But do you not be ashamed of enthusiasm. It has sometimes led men without a proper balance of intellect to do a foolish thing, but never an ignoble one. It is impossible to achieve real greatness in our art without it. Cultivate a spirit of enthusiasm for it therefore, and thus honor your manhood and the choice you have made.

But I need not tell you that something more than this is necessary, and more necessary in our profession than in the study of any other; that is hard and honest work. Work which, beginning with this hour for some of you, is to continue for you all as long as you claim the title of student or doctor of medicine. There can be no end, no interruption. You have come here to learn medicine, but in the three years nominally assigned to that object we can teach you almost nothing of its past history, but a part of what you should know of what is at present known, so much only as will enable you to go on with ourselves with the study of that of the future. You will learn that in those branches in which science is making the greatest advances the least is positively known, that the results of recent investigations in pathology, physiology and chemistry are as startling as was the discovery of the circulation in its day, and that each new revelation shows only more clearly how ill-founded is much of what we have hitherto treasured as fixed knowledge, and how much remains to be known.

You have entered, then, upon the study of a science always changing, to be ever new. Our posterity will never exhaust, never complete it. Your work, therefore, is of two kinds—to study the labors of other men in their relation to those of the past, and to learn to observe and investigate for yourselves. Now you will never advance far in either course without this work in its strictest and hardest sense. Call it "digging," labor, or what you will, you cannot shirk it or avoid it in any way. It is before every one of you, whose humblest ambition it is to make himself a thorough, self-respected physician, in its naked and unpleasing reality, as your inevitable lot, as long as your mental and physical powers hold out. As long as the science of medicine progresses you must advance with it; the moment you drop the oars, you are far back in dead water.

This is not an inviting picture, I know, of your life to-morrow and every day to come. Work is not an easy thing, at least to most men. It often means turning from the sweet and pleasant things of life, which are close at hand, to do much which is dry and difficult, apparently needless perhaps, for an object far off and doubtfully attainable. Such is the path, however, along which we must go, and happy are they who can follow it, surrounded by that golden atmosphere of enthusiasm, which makes one's footsteps swift and light.

But work can be made easier by cultivating habits of industry, by forming plans of study and disposition of time, the routine of which must be held inviolate. Custom makes everything endurable at last. Before this week has closed make your choice of studies, what lectures you will attend, what time you will pass in the dissecting-room and hospital, how you will spend the intervening hours, and how much of the evening you will give up to the requisite reading. These plans must vary for each of you of course, according to what you have already accomplished in your studies; but having wisely fixed them and in proportion to your strength, make it a matter of honor with yourselves not to deviate from them a single day to the end of the course. Let even February, when lectures become a burden to student and teacher, and when lengthening days foretell the relief at hand, find you constant to this pledge. If you succeed, you will have gained a victory which will well nigh of itself ensure your eminent success in after years, for the next trial will be easier to bear, and repetition of such training fixes the habit for life. Remember that there are no short cuts in medicine, that you are to take, what seems perhaps as utterly useless as it is uninteresting to you, at the value your teacher sets upon it, trusting him as the better guide to choose what you should be taught. With the confident expectation of the dawning of this spirit of enthusiasm, and with such self-promises of earnest and steadfast devotion to your purpose, I would have you to-day begin and continue your medical life.

But which of all the many branches taught here am I to select, and how shall they be best studied, are questions which will naturally arise in the minds of those just entering upon these duties. To those who have received no advice upon these matters, and have never attended a course of lectures, I would say, devote the largest part of your time to anatomy, physiology, and chemistry. These will teach you the structure of the human body and the phenomena of its functions, which constitute

healthy life. Many life-times have been spent in acquiring our present knowledge of them; you can well spend a year upon the same. Until you have done so, you cannot comprehend the later studies relating to the abnormal manifestations of the same vital actions we call pathology. Disease can never be properly recognized, interpreted, or treated, until the composition and function of every tissue and organ in the body are so intimately known that the nature and extent of any deviation from their normal laws are clearly understood. The autopsy room and lessons in pathology taught there are of no use to you, until you have familiarized yourselves with the dissecting-table and the histology learned in the microscope room. The bedside and the medical lecture-room are no places for you, until you have learned all that physiology will teach, and have made yourselves familiar with chemical reagents and their action upon the normal tissues and fluids of the body; you cannot understand therapeutics or venture to produce the physiological action of drugs, until you have studied their toxicological laws and relations of incompatibility. Two years are given to these studies in better schools than ours; so much you cannot give in our short and insufficient courses, but do not be tempted to give less than half as much. These branches are the groundwork of the art of medicine, and it is in these that students generally fail in thoroughness, and therefore as physicians fail to know their art through life.

You are to study them in the months which immediately succeed in several ways. Sitting through a lecture or a course of lectures is not necessarily study at all, and even faithful and comprehensive listening is but a small part of it. What you hear is to be received into your mind, not to be shut up within the covers of a note-book. It is to be digested while the impression is fresh upon the memory, and to be fixed there by the evening's collateral reading. A note-book is useful for such immediate assistance to the memory; if kept as a substitute for it, it is worse than useless. But in addition to the lecture and the faithful reading at night, your days should be largely given to the dissecting-room and the microscope, and to such chemical and physiological laboratory work as opportunity affords. A few dollars will give you all the apparatus you require to work out some of the most important investigations in these branches for yourselves, and to learn the processes of manipulation, which you will never acquire later, if you neglect them now. By such beginnings you will gain the taste and courage for that independent work in later years which will distinguish you from the ordinary practitioner. I do not mean to say that you should take absolutely no share in any of the other exercises of the school, that you should not attend operations and occasionally visit the hospital, and see an autopsy, and perhaps study surgery and materia medica; but the less of these and the more of the others the better. A single year's attendance upon the advanced branches after such a preliminary training will give you a far deeper knowledge of them than one gets by a three years' course pursued without system or given wholly to the so-called practical or special branches.

There is no such contemptible spirit among students as this exclusive or preferred attention to such parts of their studies as seem to have a practical value. It exhibits itself in attendance upon the lectures relating to the practice of medicine or the hospital visit only, and in the production of the note-book only when the word treatment is mentioned or the formula of a recipe is given, and in the neglect of all that raises medicine to the rank of a science and its followers to be learned men. It degrades the art to the level of a mere trade. Such would be the spirit of one of a band of naturalists who, in regions unexplored by science, should spend his time in stuffing his pockets with grains of gold for future barter, while his companions were collecting the new and beautiful productions of nature's present work or the vestiges of the past lying about him, the possible and long-sought solutions of the grand mysteries of creation. I trust there is no one here who will entertain for a moment the unworthy thought of what is the money value of any information he may gain this winter. The truths we teach are worth knowing for their own sake, or they are not worth hearing. With us must rest the responsibility of the selection of what is best to teach. Have confidence enough in our judgment to receive as alike important whatever we offer.

There is another error with regard to choice of studies among students, of recent origin and of increasing importance. It has arisen from the modern custom of specialties in practice, and the desire on the student's part to devote his time wholly to those branches which seem to him most intimately connected with the particular specialty he may have thus prematurely elected for his future career. It is an error fatal

to your life both as student and practitioner, for it is impossible properly to study the diseases of any one organ of the body without that preliminary knowledge of pathology, which is only to be gained by a study of the whole. The most renowned teachers in special departments have been most thoroughly accomplished in others. What would ophthalmology, for instance, be today, had its special students not been eminent physiologists and physicists? Make no plans for your future life of practice of this kind, while you are students; the physician only can study a specialty. Fortunately it is a self-limited error, for the present fashion which leads almost every young medical man on going abroad to study a specialty, tempted by the easy success of many who led the van, will soon glut the real demand for such practitioners and convert general practice into the speciality, thus restoring the equilibrium.

I do not propose to discuss the subject of specialties, however; only to warn you, that you as students have nothing to do with it. What it has done for medical science in certain departments, you have opportunities of learning from the courses of University lectures, hitherto so-called, delivered in the school during the year. I am sorry to say that these opportunities have not been improved, as they should be. The Faculty has endeavored during the past few years to have presented to you by gentlemen outside their body and most eminently fitted for such duty, a summary of the most recent advances in these new and special fields of research. These courses have been prepared with great outlay of time and painstaking, and such labor has been wholly gratuitous on their part and for your benefit alone. They have furnished just such advanced knowledge, as many of you will go abroad to seek after graduating, and you have it offered you here by, I do not hesitate to say it, some of the very best students of the best masters. Let me advise you to show your appreciation of such teaching and of the personal efforts of these gentlemen in your behalf by a more universal attendance upon such courses.

There is one thing else I advise you to study during your whole pupilage, that is the German language; because the most of you have no doubt already more or less knowledge of the French, and secondly, because it is so much more important. Indispensable is the term I should use, for the science of modern medicine cannot be pursued without it. Why this is so, I shall try to explain later, but the fact is to be accepted that nine-tenths of all that is new and important in physiology, pathology, and medical chemistry is the work of German hands and brains, and is given to the world in their tongue. Sooner or later the cream of this is translated into English no doubt, but before it is converted into this medium of circulation much of it is no longer new, and for workers in the same fields nearly valueless. If you desire to keep up with the progress of your art, you must learn German. It is far more essential to you as students than any knowledge of Greek, or Latin, and French you may have or have forgotten; it will be to you almost a sixth sense of acquisition. Begin the study of it at once. Those of you who purpose to continue your studies in Europe, will find yourselves thus enabled to enter upon them without a six months' loss of time after reaching your field of operations, and most of you may not find elsewhere the favorable opportunity of learning which a large city affords. You all could use it to your immediate advantage in the reading to be done in connection with the lectures in some departments.

Thus I have tried to show you in what spirit you should take up the work before you, how you should do it with your might, and in what order and method you should pursue the studies, and all the studies, prescribed for you. I have said that with us rests the whole responsibility of the choice of those studies and the character of the teaching. If you fail therefore after faithful improvement of the opportunities here offered to become physicians of the first order the fault is ours, and you and the community may call us to account. Is the standard of education in the medical department as high as in the others of the University of which we are a part, as in the other medical schools of the country, as in the schools of Europe, or as it should and can be? These are questions about which a very wide difference of opinion exists, and in which the profession, and you, as future members of it, have the same interest as ourselves. It would be difficult perhaps to determine whether the system of medical education, so long adhered to in American schools, is due to the views concerning its efficiency held by the profession generally, or whether it is the schools which are accountable for the tone which prevails in the profession at large with regard to the subject, because each creates the other; the schools fill up the ranks of the profession with their handiwork, and

the profession in turn furnishes the teachers and governments of the schools. But it is perfectly fair to judge the latter by their fruits, and a comparison of the character of the medical profession with that of the production of the other departments of the University warrants the conclusion that in its relations to the scientific aspects of medicine we cannot claim for ourselves our proper share in the credit which attaches to the other learned professions. That our cities are not known and honored in other lands as much for distinguished physicians as for their well-known men in literature and science, is our own fault alone, and the reason is that we do not sufficiently honor our own calling. We labor mainly to acquire position and comforts, but how few of us are really students and care more for the advancement of science than for our own "getting-on" in the world. How seldom has an American physician made independent and systematic investigations in any of the sciences connected with medicine! How different is a medical reputation in other countries! In Germany the celebrated physician first makes for himself a name by incessant toil and self-sacrifice. He cares neither for society, for appearances, for comfort, only for science, and then in after years come riches and honors, as well-deserved rewards. I would not have my meaning misinterpreted. I believe that those amongst us, who are so deservedly popular as practitioners, are in every way worthy of their success. It is the resting satisfied with success in practice and making this our only aim, which is so fatal to the progress of medicine with us.

This opinion is less deserved of some parts of our country than others; it has been too true I fear of all. I take my own share fully in any odium which may attach to any single member of the profession; but I believe that such will be the inevitable future of medicine in America, until change is wrought, where I consider the source of the trouble lies, viz., in our medical schools. So long as it is held that there is a demand for cheap doctors in this country, and that an American can get as good a medical education in three years without any necessary preliminary mental training, as a Prussian or Austrian youth thoroughly drilled to methods of work and habits of industry can get in six years, or one at any rate good enough, so long we shall make poorly educated doctors and nothing else; or we should do so, if students themselves did not know better and act accordingly in exceptional cases. A student who spends one or more years in foreign schools, after being made a doctor here, cannot be pointed at as a specimen of American handiwork in answer to this view of the case. Do we ever reflect that the multitudes of American students in the medical schools of Vienna and Berlin are a reproach to our country? Why do we not find an equal number in the seats of Law and Theology, of natural and mechanical science there? The high and well-deserved reputation, which our students bear among foreign classes for quick perception and interest in their studies, shows the quality of the native material waiting the proper training at home; though I fear that our student abroad clings too closely to the spirit of his American education, and is found still following too exclusively the practical branches of his art. This is the evil genius of our system, its radical defect. It is here and within our schools that we must meet it. Until we renounce the theory that medicine in America is to be taught not as a science as elsewhere, that only so much of it is to be served up to the student as will make him a good practising doctor, and that he has no share in its future progress as an independent worker in its deep places, we need not hope for better things. Plans for elevating the standard of education by longer courses or forced attendance throughout the year, are of little importance, until we are prepared to make the spirit of our schools what it should be. Then every desired reform will follow without forcing.

How is it with the other departments of learning? Is there not the same demand for poorly educated men in the other professions as in medicine? Yet what would we say of the character of a law-school which should content itself with a plan of instruction adapted to make its students merely good practising attorneys, and not attempt to stir a higher ambition in them for the graver matters of statesmanship and international law; or what of a polytechnic that should turn out chemists and mining engineers with so little self-respect, so low a conception of the dignity of their calling as to sell their name to be attached to every nostrum in the market, or to furnish from an ounce of ore a certificate that a mountain of equal value awaits the investment of too credulous capitalists? Should we not demand a reformation in their management; would not a University to which they were attached enforce it? Fortunately this is not the character of these professional departments of Harvard; as high a

tone prevails throughout them as in any of the oldest and most renowned schools of Europe, and their graduates are recognized as the peers of their co-laborers all the world over. Can we say this of those whose education has been acquired solely in any of our schools of medicine? Is there any reason why we should not be able to say it, or at least should not want to say it? Has public opinion not a right to demand that medicine like all the other learned professions shall be of equal excellence with that of any country? For if there is any question of education in which the public should feel an interest, and act on it, it is that which determines the character of those to whom it must confide the care of its physical well-being.

To those who may say that I am taking an unpatriotic view of the matter, that my estimate of medical education and our profession in America is too low and unfounded in fact, I will only reply: when I find the young men of Europe flocking to our shores and crowding our native students from their seats and from the bedside, when the fees of our best lecturers are mostly paid in foreign coin, and when thousands of wealthy invalids from across the sea fill the waiting-rooms of our physicians, then I will confess that I am wrong, and that of the two systems of education ours is the best. Until then I shall seek in the spirit and working of their schools the secret of their success, the cause of our failings.

Turning a little way back into the past will perhaps bring out in still stronger lights the truth of the lesson we may read there. . . . . There was a time when the French capital was looked upon by the medical profession throughout the world as the one and only seat of science, where alone the grand truths of our art could be discovered and taught. Students from every country went thither to complete their studies, and to see the men whose names had been upon the lips of their teachers all through their early instruction at home as demi-gods in science, and whose opinions they had been taught to receive unchallenged, as fixed principles. Even the hospitals associated with their teachings became famous, and Hôtel Dieu, La Pitié, La Charité, du Midi, San Louis, were as familiar and classic names to the student of medicine, as the Parthenon and Forum had been during school and college days. The distinguished men who composed the Faculty were then at the height of their fame, and formed a body whose brilliant reputation was fully deserved and has never been equalled. Paris had then no rival as a school of medicine; she was the acknowledged front and centre of science. This was only a quarter of a century or less ago; but what position does she hold now? The earnest students of other countries no longer visit her exclusively, or even first or second, to complete their general studies, or to perfect themselves in any special branch of our art; nor is French now the universal or most important language of science, as it once was. The very names which then commanded such world-wide respect are now almost memories associated with the past, and are no more the representatives of the medicine of to-day.

What is the cause of this decadence? Why is it that the Wiener Schule holds at this moment the place then occupied by the Ecole de Médecine? The great masters in Paris have not died out and left their places to be filled by smaller men in Vienna, for with one or two exceptions the roll of French professors bears the same distinguished names that it did twenty-five years ago. Other causes have wrought the change. Gradually the philosophic German mind, so sceptical and irreverent as to accept no dogmas unchallenged, and so patient and industrious in following the suggestions of nature to their very source, began to make itself heard. This influence, at first felt in small things and expressed in special directions, soon became an acknowledged power, as the careful observations of devoted students, men who cared for little else in life than their studies, who had no higher ambition than their scientific reputation, who knew no other pleasure than was to be found in the laboratory or hospital, and who never aspired to become rich, became known. Such men as these were called together, as their names and works attracted attention, and formed the Vienna School, a body of special students, in no way men of brilliant genius, but keen observers and accomplished teachers. It is this devotion to study in special directions, as the prime object of their lives, science before wealth, that has made German medicine what it is. It has given us Rokitansky, Virchow and Förster in pathology; Wunderlich, Oppolzer, Skoda and Frerichs in general medicine; Hyrtl in anatomy; Brücke and Ludwig in physiology; Jäger, Græfe, Donders and Arlt, Hebra, Sigmund and Scanzoni in their special departments; Liebig, Lehmann and Scherer in chemistry, and many other distinguished instructors who might be mentioned. In

the meanwhile Paris has been living chiefly on the reputation of her past greatness, and the slight progress she has made has seemed complete stagnation by the side of the vast advance of her indefatigable German neighbors. . . . . .

This is a sketch I made only four years ago. See how closely the words then written resemble the language of Prof. Helmholtz, perhaps the purest scientist living, at the meeting of the German Association for the Advance of Science, at Innsbruck two years ago, in speaking of the secret of the success of science in Germany—the *Sittenstrenge und uneigennutzige Begeisterung* of its students. Words which Prof. Rolleston quotes in his recent address before the biological section of the British Association, and which, that they might be the guiding principle of all other students of science, he translates—"Severe simplicity of manners and absence of a spirit of self-seeking." What might not be said of the lesson brought down to these memorable days in the history of the two nations. How have splendor and self-glorification, worship of pleasure and shallowness of life gone down before earnest devotion to duty, trained habits of industry, and the highest and most universal education of the individual!

When I went to Vienna, fourteen years ago, I found but one American student there; but few had been there before me at long intervals, and hardly one, I believe, to remain any length of time. In contrast, a picture may be seen hanging in the office of many of our youngest physicians apparently of the recitation-room of our professor of clinical medicine during the summer session. The somewhat unstudent-like grouping will reveal to closer observation, however, that it is a Vienna photograph, but recently taken, in which that instructor is surrrounded by the multitudes of our former students, who were continuing their studies there at that time. The change from then to now is not greater perhaps than what may follow a few years hence, when the graduates from our progressive collegiate department shall omit the intermediate step here, and begin, as well as end, their medical studies in foreign schools. Such must inevitably follow as the sequence of a more general acquaintance with the superior advantages offered by them, and with that requisite knowledge of the German language which enlarged freedom of election will afford, unless American schools shall make such a course unnecessary, by making themselves what those are and they should be.

This is to be a work, however, of slow and gradual progression. It cannot be enforced by any enactment of associations or change of statute alone. Their future success depends upon the teachers, and teachers, such as have made those schools what they are, must be created by our schools, and that is possible only by adopting the spirit and system which have led them up to their greatness. An ardent enthusiasm, earnest devotion to work, and a search for truth for truth's sake alone; and a system which recognizes a thorough scientific training as the only groundwork for a medical education, which teaches to the utmost limit the science of medicine in all its branches, and which believes, and proves, that the most practical man and best practising physician is he who has the widest and deepest knowledge of these scientific truths.

Follow with me the first clinical teacher in the world at the bedside. See how largely, in all he teaches, he draws upon the sciences connected with medicine, how thorough a knowledge of them he reveals, how constantly he applies it in the illustrations of his marvellous powers of diagnosis, how it makes him the renowned practitioner, as well as teacher, that he is. His knowledge of them is not picked up second hand, nor is it a patchwork of fragments selected with sole reference to its practical application. None more eager than he in attendance at the laboratories of his colaborers in chemistry and physiology, at the microscope, by the cadaver; none so constant through years, always searching, but as ready to follow as able to lead, knowing that there can be no halt in such labors and duties. Can we wonder at the success of a school where the most practical branches are thus taught? Yet there are those who hold and express honest convictions that such studies are not a part of a practising doctor's business, and that their patients are even the worse for it. In other words, that a man cannot make personal investigations in the sciences connected with medicine and do his whole duty by his patients. See how the vast advances in modern ophthalmology, which have elevated this branch of surgery to the rank of a true science, have been the result of the labors of a few such men as Donders, performed in the midst of the busy life of the popular practitioner. Do we not prize the professional advice of such as of the highest value, and seek it at any price? Scientific truths of the most important practical bearing in medicine must

in fact be mainly the result of the study, if not the prime discovery, of medical men, and I believe that no man can be a fit teacher to a medical school in any of the collateral branches of science, who has not received that special training which a medical education alone affords.

Who of us can say that he gives his whole time to his patients, that he takes no interest or active part in concerns outside the immediate care of patients, which might not, with the same devotion to them, be spent as well in the cultivation of scientific studies? Do not some of our best and busiest physicians find time and inclination for such side studies? May I not be allowed the liberty of naming one formerly and so long connected with this School, who though now retiring from an active part in the labors of his life, has been for so many years the acknowledged and revered head of our profession in New England, the physician to so large a portion of our most refined citizens, and the councillor sought above all by physicians far and near; is it believed that he was any the less skilled or attentive in his personal care of the sick, any the less sagacious in consultation, for the labors of his earlier life as explorer and writer in the unroamed fields of American botany, in whose path no gleaner has since been needed; or for those later studies in the arts and sciences, which made him so long conspicuous as the fit president of the most ancient and learned body of men of science and letters in the country? Would any of us change the memory which will attach to the name of Bigelow in American medicine? Would we rob our models of the ornaments which have given them this distinction? I fear we should thus degrade the greatest of them, if we are consistent with such teaching. Let us rather believe that great physicians have become great not in spite of, but in consequence of this cultivation of the sciences and liberal studies, which so characterize their lives.

Let me use the branch of medical instruction with which I am connected as an illustration of the relations of what is called science to medical education. There is no study which is considered less practical by the student, therefore there is none in which he takes so little interest, none in which he betrays such extreme ignorance in many cases at examination for degrees, as chemistry. How shall such a branch be taught? Chemistry has become of itself a circle of sciences, which no one man can now master, even by exclusive devotion to its study. It is applied chemistry then alone which can be taught in a medical school, and the question is, how widely or how narrowly shall we interpret its application. Take, for instance, its relation to the study of one of the most important excretions of the body, the urine. Every student knows the importance of a chemical examination of this solution as a means indispensable in the diagnosis of certain diseases, and that it is necessary to be able to recognize the presence or absence of certain substances in it by simple tests. But is it enough for him to know, or for us to teach, the crystalline form and chemical reaction alone of uric acid and urea, for instance, and the semeiology of their fluctuations? Is he not rather to be led also to comprehend how intimately the study of these bodies is connected with that of the metamorphosis of our tissues and the dynamic value of the intermediate products of tissue change; how from the former an almost endless series of new compounds may be created, some of which are important way-stations between health and disease, and which can only be understood through the formulæ which express so much while seemingly so meaningless? How the latter, the last expression of a long series of intermediate chemical changes, passes out into the world again reduced to the simplest form of matter, ammonia and carbonic acid, to form in turn the life of the vegetable upon which the animal directly depends for support. How the quantity of urea is the index in part of the amount of heat and motion manifested by our tissues; how its spontaneous change into ammonia and carbonic acid leads to the lesson to be learned by the study of its artificial production in turn form cyanate of ammonia, which was the first blow to the theory of vital action as a necessity in the conversion of inorganic into organic matter.

These are but a few only of the questions of prime importance suggested by the mention of these well-known ingredients of this excretion, but they form but a small page in its chemistry as a whole in relation to medicine, and this but a chapter in the grand volume of physiological chemistry. Even the little deviations from its ordinary operations, which we know as pathological chemistry, can never be fully understood without a thorough knowledge of its normal laws in their widest application.

But it is not only in its relation to disease that the study of chemistry is of interest to the student Recent inquiries,

directed by a few master minds, into the laws and phenomena of nature, have shown that a marvellous correlation exists not only between her creations, both animate and inanimate, but between forces hitherto considered distinct, bringing so-called physical laws into close connection or identity with those we call chemical, and throwing grave doubts upon the existence of any such distinct power as that called vital force. The study of animal chemistry has therefore come to occupy a position of great importance and interest in this connection, for it is through its aid that we can trace the mutual relationship existing between the phenomena of our vital existence and outside physical forces and their products, between our tissues and those manifestations of our higher and inner nature we call mind or intellect. These questions have excited the active interest of the highest intellects of our time. Their consideration has been impatiently snatched from the field of scientific observation, and made the subject of passionate discussion in public arena. Such opinions as the following could indeed hardly pass unchallenged.

Prof. Owen expresses his conviction that "vital forces are only ordinary physical forces, that inanimate matter is made into living beings by conversion of chemical into so-called vital action."

Odling says, "But what the physiologist means by vital force I have never been able to understand. So far as I can make out, it seems to be a sort of internal, intransferable, immeasurable, self-originating power, which performs nutritive acts by its absolute will and pleasure, as if it were not abundantly manifest that the growth of a plant and incubation of an egg cannot be performed without a direct supply of external force. * * * Seeing then that the enormous number and variety of animal and vegetable compounds are produced out of carbonic acid, water and ammonia, not by any peculiar vital force, but merely by the light and heat force of the sun acting through organic machinery, the question naturally arises, whether the chemist may not effect in his laboratory-machinery a similar intercombination of deoxidized carbonic acid and water, either by a direct application of sun-force, or indirectly by the aid of those terrestrial transformations of sun-force, which are so abundantly at his disposal. This question, decided absolutely in the negative so long as the fiction of vital force tyrannized over men's minds, has of late years received a rapid succession of brilliant affirmative replies. Already hundreds of vegetable compounds, heretofore produced only in living organisms, and, as was supposed, put together and held together by vital force, have been formed by the chemist in his laboratory. * * We see no reason to question the chemist's ultimate ability to reproduce all animal and vegetable principles whatsoever."

There are those, however, who do not stop here, content with thus referring our merely animal functions to the general chemical and physical laws which govern all matter, laws which make no distinction in their control over the growing crystal and the human fœtus, but would apply the same explanation to those intangible manifestations of consciousness, will, and intellectual power, which we have so long looked upon as within us and not of us, far removed from any connection with material phenomena, and which we call mind. The theory is a fair one, and we should not be scared from its contemplation now or its acceptance hereafter, if properly substantiated, by any cry of materialism or heresy it has stirred up. The same outcry has been resounding in ever narrowing circles from long before the days of Copernicus and Galileo. If it had been heeded our knowledge of geology would still be confined within the scriptural statement, and our acquaintance with man's previous existence on the earth limited by the records of a restricted archæology. It has been the never failing opponent of all progress in natural science, but its influence has perhaps been more beneficial than otherwise, as it has served as a healthy stimulus to observers. We should never let it deter us therefore in our investigations of the laws of nature, or hesitate to accept the path their proper interpretation points for us, over whatever dogma it may lead. A search for truth in an honest spirit of inquiry will never lead us to wrong, as we follow only where the Creator has been before.

Thus we shall be prepared to receive in the spirit in which they are written these words of Prof. Huxley in his lay address on Protoplasm or the physical basis of life. "In physiological language all the multifarious and complicated activities of man are comprehensible under three categories. * * * Even those manifestations of intellect, of feeling, and of will, which we rightly name the higher faculties, are not excluded from this classification, inasmuch as to every one but the subject of them, they are known only as transitory changes in the

relative positions of parts of the body. * * * Carbon, hydrogen, oxygen, and nitrogen are all lifeless bodies. Of these carbon and oxygen unite in certain proportions and under certain conditions, to give rise to carbonic acid; hydrogen and oxygen produce water; nitrogen and hydrogen give rise to ammonia. These new compounds, like the elementary bodies of which they are composed, are lifeless. But when they are brought together under certain conditions they give rise to the still more complex body, protoplasm, and this protoplasm exhibits the phenomena of life. I see no break in the series of steps in molecular complication. * * * If the properties of water may be properly said to result from the nature and disposition of its component molecules, I can find no intelligible ground for refusing to say that the properties of protoplasm result from the nature and disposition of its molecules. But I bid you beware that, in accepting these conclusions, you are placing your feet on the first rung of a ladder which, in most people's estimation, is the reverse of Jacob's, and leads to the Antipodes of heaven. It may seem a small thing to admit that the dull vital actions of a fungus, or a foraminifer, are the properties of their protoplasm, and are the direct results of the nature of the matter of which they are composed. But if, as I have endeavored to prove to you, their protoplasm is identical with, and most readily converted into, that of any animal, I can discover no logical halting-place between the admission that such is the case, and the further concession that all vital action may, with equal propriety, be said to be the result of the molecular forces of the protoplasm which displays it. And if so, it must be true, in the same sense and to the same extent, that the thoughts to which I am now giving utterance, and your thoughts regarding them, are the expression of molecular changes in that matter of life which is the source of our other vital phenomena. * * * Every word uttered by a speaker costs him some physical loss; and in the strictest sense he burns that others may have light. So much eloquence, so much of his body resolved into carbonic acid, water, and urea. * * * * Two things are certain: the one that I hold these statements to be substantially true; the other that I, individually, am no materialist, but on the contrary believe materialism to involve grave philosophical error."

I have thus quoted from some of the most daring and yet soundest thinkers and keenest observers, to show the tendency of modern belief in these directions, and to illustrate how intimately the study of animal chemistry is connected with some of the most profound problems of life. In fact, the conclusions they advance are founded in detail almost wholly upon the observations of the latest German workers in physiological chemistry, and none but those prepared by study to judge the accuracy of the latter, are competent to decide how far the deductions of the former are justified. They are questions, however, about which all the intellectual world is talking, and too large a portion of it writing. Protoplasm has succeeded Darwinism, and later the Correlation of Forces, as the pet theme, and a great deal of nonsense is said and written about it. The thought of vast beds of homogeneous *Urschleim*, the matrix of sub-embryonic life, the unshaped beginning of the fauna and flora of future epochs, lying beneath the silent and solemn depths of ocean, is indeed calculated to startle the reason of men of science from its accustomed channels, and excite the interest of the least thoughtful. You will find yourselves often called upon, no doubt, as professional men and students, to explain or offer an opinion upon this or that statement in the controversies which have arisen and are to follow, but you will be able to make but a poor response, unless you have made yourselves familiar with the details of the data upon which the whole question is based, and which concern you so deeply in other relations.

I would have chemistry taught, then, in its widest application possibly consistent with the student's period of study; in its fullest bearing upon and as the most important means in the study of physiology; in its relation to materia medica, the incompatibility and physiological action of drugs; as the basis of toxicology, and its important services to medical jurisprudence; and, finally, for the superior and exact mental training it affords to a profession sadly needing it, and for its irresistible guidance of the student into the ever-widening paths of general science and a broader culture. I would have the student taught all this, not as if it were to be the end of its study, but as the beginning of independent work on his own part in one or the other of these directions, so that his life may have given something to science in return for the much he has received from the labor of others.

And such is the spirit I would see carried into all your studies. I would have you dispossess your minds of the too com-

mon belief that everything can be learned at the bedside; it is a fatal barrier to individual and national progress in medicine. Nothing can be gained there but the shallowest, routine acquirements, until the senses have been taught how to investigate, and the mind prepared, by long and diligent study of the normal laws of life, to comprehend the phenomena of disease there presented. Even when thus trained, you will find that much of the first importance cannot be gained by bedside studies. Man has been looking at his sick brother now for centuries; he has learned the interpretation of many symptoms, and the pathological changes of structure and disorders of function thus indicated, but what has he learned there of their causes, and how little of means to cure! Medicine has accomplished but little yet of its possibilities for the benefit of mankind. I may venture the prophecy that its grandest discoveries are waiting outside the sick room; that in his surroundings, the air he breathes and its unseen inhabitants, the foreign elements which make his food and drink, the soil upon which he dwells, lie hid the obscure causes of pestilence and contagion. They will not reveal themselves by watching their effects, nor will they cease to do their accustomed evil in the world, while the present narrow system of exclusive clinical investigation is adhered to. There is of course nothing new in this prediction; we are all familiar with such views, and all believe there may be something in them, as we say, and there stop. But where do we see put in operation in any systematic and large way, and by competent observers, those investigations which would sooner or later test their truth? Where are our students taught, as they should be, the laws of hygiene, and made acquainted with the lowest forms of organized existence, without which knowledge their explorations may result in such pretentious exhibitions as have lately been forced upon public attention to the discouragement of future intelligent observation in the same field!

I cannot refrain from quoting from Prof. Huxley's address before the British Association for the Advancement of Science at Liverpool a few weeks ago, on the germ theory of life. "I commenced this address," he says, "by asking you to follow me in an attempt to trace the path which has been followed by a scientific idea, in its long and slow progress from the position of a probable hypothesis to that of an established law of nature. Our survey has not taken us into very attractive regions; it has lain chiefly in a land flowing with the abominable, and peopled with mere grubs and mouldiness, and it may be imagined with what smiles and shrugs, practical and serious contemporaries of Redi and Spallanzani may have commented on the waste of their high abilities in toiling at the solution of problems which, though curious enough in themselves, could be of no conceivable utility to mankind. Nevertheless you will have observed that before we had travelled very far upon our road there appeared, on the right hand and on the left, fields laden with a harvest of golden grain, immediately convertible into those things which the most sordidly practical of men will admit to have value, viz., money and life. * * * * Looking back no further than ten years, it is possible to select three in which the total number of deaths from scarlet fever alone amounted to ninety thousand. That is the return of killed, the maimed and disabled being left out of sight. Why, it is to be hoped that the list of killed in the present bloodiest of all wars will not amount to more than this! But the facts which I have placed before you must leave the least sanguine without a doubt that the nature and the causes of this scourge will, one day, be as well understood as those of the Pebrine* are now; and that the long suffered massacre of our innocents will come to an end. And thus mankind will have one more admonition that 'the people perish for lack of knowledge;' and that the alleviation of the miseries, and the promotion of the welfare, of men must be sought, by those who will not lose their pains, in that diligent, patient, loving study of all the multitudinous aspects of nature, the results of which constitute exact knowledge, or science."

But what can be done to correct the failings of medical education in America, to elevate its tone, to stimulate the cultivation and teaching of science, to place our schools on an equality with those of Europe, with other departments of learning at home? In the absence of any general central power such a change can be effected, I believe, by no concerted or enforced action on the part of the schools, for they are too numerous and are governed by too diverse and independent motives of interest to unite in any practical scheme of reform. Each must act for itself, and stand or fall as its policy proves to be wisest or not in the end. We are responsible therefore only for ourselves, and the question reduces itself to the relation of Harvard University to medical edu-

* Vine disease.

cation, to the duties of you its students, of us its representatives in the medical department. Your own obligations to the future of the profession, to the school, and to yourselves, I have tried to place before you in what I have said; but how can we, who are answerable for its more immediate success, respond to that new vitality which, radiating from the collegiate centre shall freshen all the other departments to unwonted activity? How can we contribute our share to the common purpose of making our alma mater in all her schools the head of education in America, a true University of the first class?

First, we might insist that students should come better prepared by previous intellectual training and by the study of such preliminary branches as general chemistry, physics, botany, and the Latin, French, and German languages, to comprehend at once the higher lessons of applied science. Secondly, that they should remain connected with the school throughout their whole period of study; that the lectures should not be crowded into four months' space of over-work, but blend with the present summer course of instruction in a harmonious and far more useful scheme; that the students should be divided into classes by years, and be required to follow the gradation of studies adapted to such classification; and that the whole time of study be prolonged one or two years, as in foreign schools. Thirdly, that no student should receive a degree in medicine, until he has passed a satisfactory examination in every branch that is taught in the school.

Such are the measures which in time would raise an American Medical School to an equality with the best elsewhere; they can be, and, I trust, will eventually all be carried out; but what would be the immediate result, if the government of the University should ordain such a revolution in the American system? An analysis of the list of those who attended lectures last year shows that of 276 students but 62 had received a previous collegiate education, so that probably not more than a quarter of the whole could have met the required terms of admission; next, that but 92 of the whole number were connected with the summer school during any part of their whole course of study, and this represents fairly enough the proportion of those whose circumstances would permit a constant connection with the school, even for a three years course; were it prolonged, even this estimate might be too high. We may conclude then that such a reform would inevitably be followed by the immediate loss of two thirds of its present number of students, by an equivalent crippling of its material resources, and the sacrifice of the prestige of a large school. It is evident therefore that without other means of support than those now at command the school could not be carried on.

But if on the other hand such means were provided, what would be gained to counterbalance that which would be lost by such a reformation? In the first place we should be able to systematize our instruction, now wholly impossible when individuals may begin their studies at all times; for when the third year student and the beginner without the slightest preliminary knowledge of chemistry, for instance, are to be found in the same recitation-room, it is evident that such instruction must be far above the understanding of the one or as far below the requirements of the other. We should equalize the value of our degrees, which are now most unfair in their significance, while no distinction is made between the student who only sits more or less of four months in our lecture-rooms and those who have been under our personal guidance for three entire years. Now Harvard University puts the same stamp of approval and warranty on both. And we should enhance the value of our degree a hundred fold. As it became known that this school had ceased to compete with others in a system so well adapted to make the most rather than the best physicians, that it required a certain preliminary training before it received students, and kept them long enough to educate them thoroughly before it let them go, and that its degree meant something quite apart from that of other schools, this certificate from the oldest university in the country would be sought by the best class of students from all its parts, as is that of its other departments, and its graduates would at once assume a distinctive position in the profession. This would force the best existing schools in turn up to a higher level, and thus the character of medical education would be gradually rescued from its present deplorable condition. Such, I believe, would be the happy results of such a reform. Such a reform, too, would best come from a school which was the first to establish the summer session, and has inaugurated within a few years other changes in the system of medical instruction, by which it has not only greatly improved itself, but the schools of other cities also which have followed its lead.

But if we cannot with our present means immediately effect so great a change, we can at least and at once take some of the steps above alluded to. If we cannot make it obligatory, we can make the summer course so instructive that students will be drawn to spend the whole year in the school. We can encourage a love of science and the habit of independent investigation among them. We can insist that the student shall pass a satisfactory examination in every department, before he can obtain a degree. If these branches, each and all, are considered an essential part of medical education, of course no person is fitted for practice, until he has acquired the slight knowledge of them necessary to pass the examination at any of our schools. Yet the university now publishes, with other inducements to the student, the offer that he need prepare himself in but five out of the nine departments taught. How, with so wide an opening for escape kept standing before his eyes, can we expect him to know anything of the branches not directly connected with practice. Finally, we can encourage the beginning of any movement tending to the consummation of any or all of these changes.

The last public ceremonial in the Annals of the University before this of to-day was the laying of the corner-stone of a memorial in commemoration of her sons who met heroic death in discharge of man's noblest duty. It is a monument to the dead, but for the living. While it rises, and as long as it continues to stand, it should be to all, student, teacher, graduate, the same memento; that the spirit which led them in the hour of their country's peril to offer their lives to her, should be none the less ours in the safe and easier future they have left us; a spirit of devotion, of self-sacrifice if need be, to the highest duties, towards the noblest ends—not reserved for public and exceptional display, but to be the ever constant motive in the doings of daily life. To show how we may best discharge our present obligations to humanity and to the cause of medical education in America, has been the motive of this address.

ADVANTAGES OF FOREIGN STUDY TO AMERICAN MEDICAL GRADUATES.

By Edward Wigglesworth, M.D., Boston.

"Home-keeping youth have ever homely wits," and we trust that, among medical students at least, no one can be found ignorant of the advantages to be derived from a more extended experience. To show the necessity of improving these advantages, in what they consist, where they may best be sought and how, is the object of these few words addressed to American medical students about to graduate.

We all appreciate thoroughly the enlarged, cosmopolitan and eclectic views of our revered professors, who "prove all things and retain the best," but *exemplo plus quam ratione vivimus*, and however good our theories may be, we need actual experience also to fit us for our career. *Experientia docet*, and we should compare the experiences of many men and under varied conditions. We should study disease under different climatic influences, under the influence of different temperaments and of different habits of life. We should compare the maladies of widely separated lands, and endeavor to ascertain the causes of their dissimilarity. Are we to be general practitioners? Consider the responsibility of taking into our keeping the life of a fellow human being and the happiness of his friends. It is not enough to feel that we have done all that we could for his benefit; we should wish to feel that we have done all that any one could. Are we to be specialists? Science, thanks to the mechanical discoveries of the last few decades, has now progressed so far that it is impossible for any one man to master thoroughly all branches of medicine, and we should wish, after, it being distinctly understood, a thorough general course, to study our specialty in that place where, from any reason, this specialty has been most completely investigated. And bear in mind that the specialist must never neglect general extension of knowledge while devoting himself to intensifying his acquaintance with a particular branch. His rule of conduct is addition, not substitution.

In what do the advantages of foreign study consist? Generally, in the age and experience of Great Britain, the systematic method and accurate analytical investigation of Germany, and the bold experiments of France. Particularly, in the fact that whereas republics are slowly and unwillingly forced into establishing imperfect institutions by voluntary contributions, despotism compels at once the perfect formation on a grand scale of that which is seen to be needful. In La Charité at Berlin and Allgemeines Krankenhaus at Vienna may be found under one roof every department of medicine, and the entire quarters in the neighborhood of these grand hospitals are

given up to medical students, who thus save every instant of time, passing directly from one lecture or clinique to another.

Moreover, the dense population of Europe, the poverty of the lower classes and the low tone of morality cause, first, aggravation in the forms of disease; then, an only too great willingness to seek the support of public institutions; and, finally, a perfect submission to the will of the physician, unknown in a land where independence and modesty are carried often to a degree incompatible with common sense. Here the patient is the first consideration, the disease the second; in Europe the disease is the only consideration. We state merely facts. Our business now is simply with the "what is," not with the "what ought to be."

Scire ubi aliquid possis invenire, magna pars eruditionis est. Let us therefore consider what things we cannot find at home and where we are to look abroad to remedy these deficiencies. And here we should say that it is merely to the more advanced age of foreign institutions, to their superior advantages in regard to number and quality of patients and endowments of money that we refer, for in intellectual capacity we consider our "Faculty" inferior to none. In surgery, in fact, we stand in the van, for here American foresight, presence of mind, versatility and inventive ingenuity, combined with manual quickness and dexterity, give us a preëminence over all others.

We lack, however, the gigantic museums of Europe, with their numerous and varied specimens. We lack its immense chemical laboratories, where whole classes work under the constant immediate supervision of a professor. We lack its hospital wards devoted solely to obstetrics, where the student may pass whole nights delivering all cases, and, under supervision, performing all operations. One of our friends has seen nearly thirty cases during a single night in Vienna, and we ourselves, *manu propriâ*, have delivered eleven cases in the same time. Here also difficult deliveries, with operations, are performed by both professor and students in public before the whole class, and, thanks to self-interest, preference is generally given to the foreign student. In clinical medicine the Vienna system is admirable. Each patient on admission is assigned to two students, who make the examination and diagnosis, prepare full reports of the case to be read before the class, and are responsible for the whole direction and care of the sick person. This is all done, however, under the ever watchful eye of the professor attending, and both Skoda and Oppolzer spend perhaps one to two hours over a most thorough lecture upon their important cases.

With regard to diseases of the skin and syphilis, whole hospitals abroad are devoted exclusively to these subjects. Women as well as men are in Vienna completely denuded of all clothing for examination by the professors and students; and the comparative advantages of all methods of treatment are accurately investigated. Whole wards are devoted to variola. In Vienna the mortality is hardly three per cent., and pitting is rare.

Ophthalmology, otology, laryngoscopy, &c., and microscopy receive as much attention as with us surgery or clinical medicine, several professors devoting their exclusive attention to each of these branches. In short the student's sole difficulty will be *l'embarras de richesses.* In dentistry, however, as in surgery, America holds an enviable preëminence.

Let us examine now in detail what each great European city offers us and under what professors of world-wide reputation we can study.

The first medical school in the world at the present day is indisputably that of Vienna. Let the list of its "Faculty" speak for itself. Anatomy, Hyrtl; Descriptive Anatomy, Friedlowsky; Practical Histology, Wedl; Path. Anat., Rokitansky; Anat. and functions of brain and spinal marrow, Meynert; Physiology, Brücke; General and Experimental Pathology and Microscopy, Stricker; Electrotherapeutics, Benedikt; Clin. Med., Skoda and Oppolzer; Auscult. and Percuss., von Schrötter; Laryngoscopy, Rhinoscopy, &c., Ditto and Störk; Surgery, Billroth, von Dumreicher, Mosetig and Weinlechner; Operations on the Urinary and Sexual Organs, Dittel; Otology, Politzer (Adam) and Gruber; Ophthalmology, Arlt and von Jaeger; Obstetrics, Braun, Späth and Mayrhofer; Dis. of Children, Widerhofer, Fridinger, Pollitzer (Max); Dermatology, Hebra, Auspitz, Neumann, Kohn (Moritz), Wertheim; Venereal Dis., Sigmund, Zeissl, Kohn (Emanuel); Chemistry, Heller. Lack of space prevents us from enumerating the many and various sub-divisions of these general branches and the numerous and able instructors in them, Voigt, Klob, Patruban, &c. &c.

The University of Berlin takes the first rank in the world. The medical department is however inferior to that of Vienna. Comp. Anat., Reichert; Osteology, Lieber-

kühn; Physiology, du Boir Reymond and Rosenthal; Spec. Path. and Therapeutics, Hirsch and Frierichs; Pathology, Virchow; Laryngoscopy, Tobold; Venereal Diseases, Lewin; Surgery, Langenbeck and Rose; Clin. Med., Traube and Frierichs; Chemistry, Hofman; Nervous Diseases, Westphal, &c. &c.

Third on our list, *proximus huic, longo sed proximus intervallo*, comes Paris; but, alas! *Roma fuit.* Paris has "fallen from its high estate" of 30–20 years ago. France like America suffers from a lack of centralization of her medical talent. She has attempted to maintain three schools of the first rank, one at Paris, one at Montpellier, and one at Strasburg, and has therefore failed in all. The school at Paris still offers inducements to students from its immense mass of material, but the instruction is inferior to what it should be. Paris has receded, while Germany has made immense strides forward. This is due chiefly to the fact that, while Vienna and Berlin are ever solicitous to absorb all the talented men of the country by the proffer of superior emoluments, Paris not only does not do this, but actually drives away all young men of ability with a narrow-minded conservatism and jealousy which does discredit to her entire medical "Faculty." Add to this that in Paris, as in London, the hospitals, dispensaries, &c., are often miles apart, while the hours for visits and lectures are the same in all. A student is thus sadly restricted as to opportunities and compelled to waste much valuable time. Paris, nevertheless, offers certain advantages to the specialist. Surgery, Broca at La Pitié; Maisonneuve at Hotel Dieu; Verneuil at Laroboisière and Reverdin at La Charité, the first to transplant epidermis to old ulcers. At the Neckar Hospital Desormeaux, inventor of the endoscope; Opthalmology, Liebreich, the probable successor of von Graefe at Berlin; Nervous Diseases, Brown-Sequard; Laryngoscopy, Fauvel; Diseases of Children, Roger; Pathological Anatomy, Cornil; Physiology, Claude Bernard and Ranvier; Dermatology, Lallier, Basin, Hardy, Guibout, Hillairet, Vidal and Paul, all at St. Louis; Venereal, Fournier, at Lourcine (Women), and Liegeois and Simonet, at Midi (men).

London.—Hospitals separated and the student must attach himself to one of the three schools at University College Hospital, at Guy's, or at St. Bartholomew's, and pay for his courses; whereas on the continent the larger part of the instruction is gratis. Ovariotomy, Spencer Wells at Samaritan Hosp.; Clin. Med., Wilson Fox (Univ. Coll. Hosp.), and Murchison (Middlesex); Surgery, Sir. Henry Thompson, Christopher Heath (Univ. Coll.), Paget (Bartholomew's), Fergusson (King's College); Dermatology, Tilbury Fox (Univ. Coll.), and Hilton Fagge (Bartholomew's).

Edinburgh.—Surgery, Lister (Surg. Infirmary); Uterine Surgery, Keith; Anat. and Comp. Anat., Pettigrew.

Dublin offers peculiar advantages to the obstetrician, and students would do well to study here the theories which he will afterwards apply in Vienna. The chief lying-in Hospital is the Rotunda under the able supervision of Drs. Johnson and Maddon. To the ability and kindness of Dr. Maddon many in both hemispheres will eagerly bear witness. A valuable work by him on diseases of women will soon be published here. In the Rotunda there are 1000–1500 births per annum, according to the abstract of the Registry. Students receive cases in and outside of the Hospital, and are held strictly responsible for them. To become a licentiate in midwifery, six months attendance is necessary, and then an examination must be passed before the master and two assistants. The Stevens Hospital is also for diseases of women. So also various dispensaries. At Trinity College, Sinclair on Midwifery and R. Smith on Surgery. At the Hardwick Fever Hospital, H. Kennedy. The weekly meetings of the Dublin Pathological Society, free to all, are of special interest.

Munich.—Anatomy and Histology, Rüdinger, at the "Royal Anatomie." Surgery, Nussbaum (Gen. Hosp.). Laryngoscopy, Oertel. Dermatology, Lindwurm and Dittrich. A fine Orthopedic Hospital lies just outside the city.

Heidelberg.—Moos on Otology and Friedreich on Dermatology. At Würzburg, Scanzoni on Obstetrics, Recklinghausen on Pathological Anatomy, and Kölliker on Histology. At Bonn, Rindfleisch and Max Schultze on Histology. At Jena, Hallier. At Leipzig, Ludwig on Physiology. His laboratory is the best in the world, with most elaborate and extensive apparatus, animals gratis and most careful instruction. Prague, Seiffert on Midwifery; Waller and Petters on Dermatology. Famous also for diseases of children. (*Vide Viertel-Jahres Schrift.*)

To save time, learn at least the grammar of the language of your intended place of residence, before starting. Then take passage to Hamburgh or Bremen, second class $72 gold. Going also as steerage passen-

ger is now rapidly becoming fashionable. On arriving go to Brunswick, Hanover or Dresden, and enter a German family, avoiding all intercourse with English-speaking people. In three months you may go to Vienna or Berlin, and begin your studies. Courses begin in Vienna on April 1st and middle of October; in Berlin or Paris, the first week in April and November 1st. Take out a matriculation ticket which more than pays for itself by cheapening courses. In Berlin, students on presentiug these tickets are admitted at half-price into the theatres, one of the best modes of acquiring a new language. Go to the Janitor at the Hospital and get catalogues and all other information. Living in Great Britain is not much cheaper than here. In Paris prices are half the English ones, and in Austria half the Paris, following the unit of currency, penny (2 cents), sou (1 cent), kreuzer (½ cent). In Vienna, one can live, *crede experto*, on $20 per month, everything included, and on $32 both the writer and other friends have "fared sumptuously every day." Our most earnest advice is, therefore, go abroad and stay as long as possible at all sacrifices; you will never regret it. The progressive West sends annually a noble quota; let the conservative East not tarry too far behind.

Selected Papers.

A WORD TO STUDENTS.

Among the difficulties with which the student just entering on his career has to contend is a want of knowledge how to set to work with most advantage. The discipline which enables him later on to turn to any subject at a moment's notice has yet to be acquired—he is apt to be fitful instead of systematic. As men advance in life, habit acquires more and more power over them, and above all things, therefore, is it essential that the habits of work should be good. The plans adopted in early life gradually shape themselves into some system, good or bad, in after life, and success in no small degree depends on the character of this system.

To practise medicine aright, one must continue a life-long student; it is only the basis of the superstructure which can be acquired during the few years spent in the Medical School. From the day of entry, therefore, the student should set vigorously and earnestly to work—not too hard at first, for this not unfrequently ends in disgust, but steadily, until the irksomeness of the task wears off, and use becomes a second nature.

In the established order of things, lectures play a most important part; it is not our intention, meantime, to argue whether this should be so or not, but, accepting matters as they stand, it is advisable for the student to utilize these to the utmost. Much harm has been done by inveighing against lectures and lecturers, but it should be remembered that lecturers are, as a rule, skilled teachers; that their lectures consist of the essence of the knowledge they have spent years in acquiring; that they can explain, illustrate, and impress their meaning; they know the points of special importance, and can insist upon them; in short, they are living powers—books but a dead abstraction. One thing too much in vogue, and most prejudicial to the student, is missing lectures; we do not speak of the evil effects morally merely, but also of the actual loss the student sustains; the keynote to the next week's work may have thus been lost. By close attention and assiduous attendance, the student, if he has a good teacher, may acquire an enormous amount of information; but as yet he holds it loosely—he has not made it part and parcel of himself. To ensure this end, home work should go hand in hand with school work; the work of the evening should supplement and complete that of the day. In each subject the student should have a well-selected text-book; as a rule, it is better to read one than several; and in this in the evening he should recapitulate what he has heard during the day. The text-book should neither take the place of the teacher nor the teacher that of the text-book, but the one should be the correlate of the other. Neither would we advise the student to read on in advance of the lecturer. Such a plan is dangerous, for it is always more difficult to unlearn than to learn; the aspects of science change fast, and no book can long be up to the latest date; it is better, therefore, to allow the teacher to lay down the accepted belief; the student may compare it with that expressed in his book, and, if the two are found at variance, he may seek an explanation which a good teacher will be only too happy to afford.

When dealing with the more practical subjects, such as Medicine and Surgery, ward-work and home-work should go hand in hand. We counsel every man to see everything he can see with his own eyes;

to do everything he can do with his own fingers. But it is hardly possible for him to encounter every form of disease or injury during his pupilage. Something must be left to reading, especially that which regards the principles of his art. But whenever a form of disease is being studied, a case in a ward and a good description in a text-book will mutually complement each other, greatly to the student's present benefit and lasting good.

The course we advocate, therefore, is that of steady industry—no fits and starts. Above all, let men doubt that genius whereby some are supposed intuitively to pick up knowledge; rely upon it that the real genius in medicine is hard work. And this steady industry is valuable, not alone in the results it brings about, but, above all, in the habits it induces. It marks a man with a life-long impression. Habits of accuracy are as easily acquired as are those of inaccuracy. In time it is easier to be industrious than idle; and, as the child is father to the man, so is the industrious student the sure precursor of the successful practitioner.—*London Medical Times and Gazette.*

MEDICAL ETHICS.

* * * * Medical Ethics are nothing else than particular cases of general ethics. We have got on very well up to this time without any code of medical ethics—although it is possible we might get on better with one—because they consist in nothing more than the application of the principles of justice and honor to circumstances frequently arising in medical practice. There is no conceivable case of differences which might be supposed to call for the application of such a code as we speak of, that cannot be settled by the logical application of these broad principles. It is very mistaken and very mischievous to think and to say that these principles are one-sided, or that they act for the benefit of the practitioner and not of the patient. If they did so, they would be principles, not of justiee, but of injustice; they would be opposed to ethics. Let us take an example, such as this correspondent suggests. Is it according to medical etiquette for a practitioner to see a patient under the care of another medical man, and to take part in the treatment, or to animadvert upon it, during his absence, and without giving him notice? To answer this question it is only necessary to translate into wider terms—to make the case general, instead of particular. Is it right to give a decision upon which health depends, without having all the existing elements of judgment at command? This, so far as the patient is concerned. Is it right to express an opinion, possibly hostile and injurious, upon the skilled and technical proceedings of a man, upon data furnished by an unskilled and interested bystander, who cannot possibly understand all his reasons of action, and who is exceedingly likely to give a very inaccurate account of that action? But is it wrong under all circumstances, according to professional etiquette, to give temporary advice and assistance to a patient under treatment, during the absence of the practitioner in ordinary attendance? Let us translate this, again, into broader terms. Is it wrong to do to another as you would have him do to you, and for another as you would have him do for you? It is and must be right to meet an emergency, when it is real, by relieving pain and distress, mental and bodily: it must be wrong to use such an emergency and to pervert such motives of action by using them to injure or supplant an absent man. Once more: Is it right according to etiquette, for one practitionor to take charge of a case already partly treated by another, who has been summarily dismissed? This, too, may be translated easily, and then answers itself. Is it right for a man to do his duty honestly? The duty of a practitioner of medicine is to honestly use his skill for those who honestly ask it, on agreed terms of remuneration. He may, however—and, if a man of honorable spirit, he will—refuse to take up an unfinished piece of work in which his predecessor has been treated coarsely or unfairly by the person who now claims his aid by virtue of a tacit compact. That compact has obviously two sides. The claim for medical assistance is correlative with the duty of fairness and right conduct to those who give it; and so the demand on any man to give medical assistance can hardly ever be so urgent as to call upon him to waive his right to insist upon the observance of that correlative condition. He may and ought to object to be made a party to an act of injustice, if injustice there be. While, then, the rules of etiquette to meet the variety of cases which occur under this head could hardly ever be sufficiently numerous to meet all the varieties of life, the general ethical rule, fairly and honorably applied, will always meet the demands of professional honor, which does not differ from abstract honor; and satisfy also the demands

of humanity. * * *—*British Medical Journal* (Editorial), Sept. 24, 1870.

PLAIN TRUTH TO MEDICAL STUDENTS.

The medical student of 1870 enters upon a career beset with difficulties but studded with rewards. The heir of centuries of research and devotion, he has to bear the weight of responsibilities ever increasing, and to uphold a standard which must be borne yet higher, and over steep and difficult paths. A higher national standard of education requires that he shall bring to his special studies the culture befitting a liberal profession; and the increasing application of exact modes of diagnosis and research in treatment demands, at his hands, an acquaintance with branches of science collateral to medicine, formerly not generally required. On this subject it is right to speak very plainly. Notwithstanding improvements in the standard of preliminary educational requirements, our licensing bodies are perforce at this moment with a second-rate standard of mere schoolboy acquirements, which is by no means equal to the just demands of medical science, and which affords a very insufficient guarantee for the future of our profession in this country. The lamentable mediocrity of preliminary acquirements which they accept is the real hindrance to the progress of medicine as a science in this country. It is unnecessary to dissimulate the truth. The miserable inferiority in scientific research, the dearth of original work, the want of exactness, the poverty of physiological investigation, the ignorant impatience of "unpractical detail" which we all have to deplore so much in the mass of professional work at this day, are due to the inadequate preliminary cultivation of our students, to their defective training in scientific method, the small base on which the pyramid of medical lore is made to stand. The solemn deprecation of excessive devotion to microscopic research; the empty sneer at chemical physic; the idle and mischievous disregard of instruments of precision—the sphygmograph, the thermometer, the laryngoscope, the ophthalmoscope—are all the expressions of a Philistine ignorance. There is one enemy against which the English student needs to be earnestly cautioned—it is what he calls his "common sense." It is almost as dangerous at the outset as that nondescript cloak of contented ignorance which often makes him in after life an enemy to science and a danger to mankind, and which he then calls his "experience." As a student, we beseech him to trust to nothing but hard-going laborious cultivated research and study. He cannot be too earnestly warned to fit himself for his work by a thorough mathematical training, by a sound knowledge of languages, by real mental discipline acquired in a working devotion to natural science. It is on this basis that he must build his clinical aptitude and judgment. The inferiority of English to German medicine is due to this inferiority of preliminary training. We earnestly counsel all students into whose hands these pages will fall to ask themselves how far they are fitted to undertake the career which they are about to enter.—*British Medical Journal.*

Medical and Surgical Journal.

Boston: Thursday, November 3, 1870.

Fellow Students: The Editor of the Journal departs to-day from his usual course and devotes the present number entirely to your use. We feel sure that you will welcome the Address of Prof. White, to which you listened yesterday, and that its valuable suggestions will take a firmer hold in your mind on careful perusal. We have placed before you some extracts from foreign journals written for the students of Great Britain, as well as a series of choice quotations from some of the living men of our own country. To those about to take their degrees, we heartily commend the advice contained in the communication on foreign study; the author has been for several years a resident of Europe, and is thoroughly conversant with the subject whereof he speaks. Our own experience warrants us in assuring you that the suggestions are sound, practical and valuable. In addition, we have arranged, in such form as we trust will be most available, various items of information concerning the facilities which Boston offers you to acquire a sound medical education.

You have already been welcomed as temporary residents to a community second to none in this country in refinement and cultivation, as well as in the rites of hospi-

tality; and you are, in like manner, given the hand of fellowship by those who will be your brethren in an honorable and learned profession. Privileges are placed before you, at this time and in this city, for acquiring a preparation for the medical profession which are unsurpassed in this country. The Professors and other Instructors of the University offer you the results of long years of study and observation; younger men, interested in various specialties, are ready to aid you in special courses of lectures and instruction; clinical facilities, amply sufficient for the requirements of early medical study, open for you the book of nature in its healthy and diseased conditions; and incentives to study and careful research are placed freely before you. By a conscientious use, on your part, of these means of improvement, we hope to place you before the world as trustworthy physicians.

But, fellow students, we demand a certain return for the advantages we offer. We trust that you enter on your studies with a due sense of your own responsibility to yourselves and the profession; that you have prepared yourselves by mental discipline and a preliminary education, without which no instruction we can give you will avail to make you good and sound physicians. Your minds should be trained to careful observation of the facts which Nature will constantly place before you, both in health and disease; to analysis, which will give you precision in diagnosis; and to wisdom, which will give you a just estimate of the means to be employed, mental, moral and physical, for the relief of suffering. We hope that you come among us with a just sense of *the honor of the profession* on which you are entering, and with a firm determination to maintain that honor as a sacred duty. In your hands will be placed the keys of life and death; to you will be intrusted the dearest interests of many families of our land. Honorable has been the record of the profession in years gone by; equally honorable let it be in the generation which you represent. Have a due respect for those who have preceded you; hold in proper regard those other members of the profession—happily still with us—for the good they *have* done; and take the places they resign to you, determined not to be behind them in the future. Honor your profession, then, that your profession may honor you.

Then, *respect your patient.* It is an Almighty Power who places in your hands a part of His power; but only that you may use it aright. No matter what is the social position of your patient, no matter what is the interest of the case to which you are called, remember that your patient is suffering, and needs your best powers, your unremitting attention, your cordial sympathy. It was a noble remark of one of the surgeons of Massachusetts, when the rebel prisoner expressed his wonder at receiving kind attentions at his hands:—"You *were* my enemy, you are *now* my patient." Those men were actuated by the best feelings of our nature, who, in organizing the International Sanitary Commission, adopted as their motto, "*Hostes, dum vulnerati, fratres*;" and, when you are called to cases of disease and distress, look on your patient as a sufferer; put yourself in his place; *deserve* the position which makes the good physician the warmest family friend and his step the most welcome sound to the waiting ear.

Your year of student life may seem to you dull and monotonous; your years of early practice perhaps even more so. But do not during these years neglect the little things of medical life. Your professional life will not be a series of brilliant results, but rather a pathway filled with little incidents, the aggregate of which will give you a position, honorable or the reverse, as you may deserve it. Go on, then, and *do your duty*, relying on the dictates of your own conscience. Do not fear want of success in your calling; if you are of the right stamp, the world will bring out the ring of the true metal in due time. If you do not see a path to prosperity, *make one*; those about you will respect you as long as the means you take are honorable ones.

Honor, then, your profession; not as that which gives you your daily bread, but as the means of doing good to your fellow men; *honor your patient,* as the true humanitarian holds in proper regard a suffering

brother, wherever he finds him; and *honor yourselves*, as you look for the esteem and regard of your fellows;—and thus we welcome you to the duties, the trials and the rewards of our calling.

THE TEACHER TO THE STUDENT.

"Your diploma, in declaring you to be regularly-educated physicians, not only proclaims that you commenced your education under teachers, that bade you own no master but truth, and imposes on you the obligation of continuing your education with an equally lofty aim, but it lays upon you the duty of practising the art of medicine, with the most rigid regard to the claims of right and honesty. The spirit, which dictates your studies, is to preside over your practice. The distinction, which your diploma confers on you, of being a regular practitioner, you are never to forfeit by any irregularity. And here, regular means honest and true; irregular, means dishonesty and deception."

"Such is something of the value and meaning of a Diploma. It is no mere decoration; no bauble. It is the symbol and standard of a profession, which you cannot estimate too highly. It is significant of all that is vital and true and noble in that profession. It is conferred upon you by those, who, when they give it, charge you never to act, or be, unworthy of it. It enrols you in the ranks of a long list of noble men, of every age and nation, making you the descendants of heroes and sages. It presents you with the confidence of the community, and declares that you will be worthy of confidence. It engages for you that your industry shall be commensurate with your strength; that your honor shall be above reproach; your honesty unquestioned; and your devotion to duty, bounded only by your opportunities."—E. H. Clarke, M.D. 1860.

"The course of preparatory study, however, above indicated, will bring the student into direct contact with facts, with disease in its present living example, and so make him its witness. It will do this for him, when his mind is prepared for observation, and for reflection upon that which is presented to it, and so daily enable him to institute comparisons between that which he reads and sees, that authoritative inquest which is to result to him in truth, namely in all that truth to which he is at the time able to reach."—W. Channing, M.D., 1845.

"Let the student confine himself to what is established, and even then he will find infinitely more than any one mind can grasp or retain."

"If any man has need of sound judgment and a high sense of honor, it is the physician. He has the reputation as well as the life of his patient, as it were, in his hands; and no one is fit to practise who is not fully sensible of the position he has assumed. His patient often entrusts to him secrets that nothing would induce him to reveal but his earnest desire for health; he implicitly relies upon the honor of his physician, and what terms of condemnation are too strong for him who betrays the confidence."—J. B. S. Jackson, M.D., 1848.

"Go into the field, armed with a detailed and thorough knowledge of lesion and disease in all its phases; of surgical expedients; of the few specific remedies, and of their uses; of the miraculous power of air and exercise, and proper food; of the applicability and agency of stimulus; of local and general depletive measures; of applications cold and warm, stimulant and emollient; of counter-irritation; and perhaps of a dozen of the most efficient drugs not specifics. These are more than you will be likely to require for a considerable period and a common practice, and with them you will do as much service to your patients as you would be likely to effect with an entire apothecary's shop, and with prescriptions two inches and a half in length."—H. J. Bigelow, M.D., 1859.

"I have always thought that the fact that the profession has had amongst its noted men some of the finest intellects the world has ever seen, and acknowledged as such not only by the communities in which they lived, but also by posterity, is a strong proof of the capability of our profession to satisfy the intellectual cravings of the highest class of minds."—H. I. Bowditch, M.D., 1863.

"But to make progress in medicine, we must have something besides respect for the ancients. If we wish to imitate their example, we must go to the same source from which their knowledge was derived. The study of Medicine is the study of Nature; and if we abandon it, and neglect what is done in our own time, because it is new, we shall certainly retain all the errors which exist in Medicine, as well as the truths which it has acquired."—J. C. Dalton, Jr., M.D., 1860.

"Medicine, sometimes impertinently, often ignorantly, often carelessly called 'allopathy,' appropriates everything from every source that can be of the slightest use to anybody who is ailing in any way, or like to be ailing from any cause. It learned from a monk how to use antimony, from a Jesuit how to cure agues, from a friar how to cut for stone, from a soldier how to treat gout, from a sailor how to keep off scurvy, from a post-master how to sound the Eustachian tube, from a dairy-maid how to prevent smallpox, and from an old market-woman how to catch the itch-insect. It borrowed acupuncture and the moxa from the Japanese heathen, and was taught the use of lobelia by the American savage. It stands ready to-day to accept anything from any theorist, from any empiric who can make out a good case for his discovery or his remedy. 'Science' is one of its benefactors, but only one, out of many. Ask the wisest practising physician you know, what branches of science help him habitually, and what amount of knowledge relating to each branch he requires for his professional duties. He will tell you that scientific training has a value independent of all the special knowledge acquired. He will tell you that many facts are explained by studying them in the wider range of related facts to which they belong. He will gratefully recognize that the anatomist has furnished him with indispensable data, that the physiologist has sometimes put him on the track of new modes of treatment, that the chemist has isolated the active principles of his medicines, has taught him how to combine them, has from time to time offered him new remedial agencies, and so of others of his allies. But he will also tell you, if I am not mistaken, that his own branch of knowledge is so extensive and so perplexing that he must accept most of his facts ready made at their hands. He will own to you that in the struggle for life which goes on day and night in our thoughts as in the outside world of nature, much that he learned under the name of science has died out, and that simple homely experience has largely taken the place of that scholastic knowledge to which he and perhaps some of his instructors once attached a paramount importance."

"To the student I would say, that however plain and simple may be our teaching, he must expect to forget much which he follows intelligently in the lecture-room. But it is not the same, as if he had never learned it. A man must *get* a thing before he can *for*get it. There is a great world of ideas we cannot voluntarily recall—they are outside the limits of the will. But they sway our conscious thought as the unseen planets influence the movements of those within the sphere of vision. No man knows how much he knows—how many ideas he has—any more than he knows how many blood-globules roll in his veins. Sometimes accident brings back here and there one, but the mind is full of irrevocable remembrances and unthinkable thoughts, which take part in all its judgments as indestructible forces. Some of you must feel your scientific deficiencies painfully after your best efforts. But every one of you can acquire what is most essential. A man of very moderate ability may be a good physician, if he devotes himself faithfully to the work."

"So gentle was he, so thoughtful, so calm, so absorbed in the case before him, not to turn round and look for a tribute to his sagacity, not to bolster himself in a favorite theory, but to find out all he could, and to weigh gravely and cautiously all that he found, that to follow him in his morning visit was not only to take a lesson in the healing art, it was learning how to learn, how to move, how to look, how to feel, if that can be learned. To visit with Dr. Jackson was a medical education."—O. W. Holmes, M.D., 1867.

"But the work of observation is a hard work. Some of you will be acute observers from the start, and some of you may be very dull; but the observing powers of the best may be improved, and the apparently dullest man of all may astonish his friends by the keenness of cultivated powers. Still it is only by labor, and properly directed labor, such as medical schools intend to supervise, that the end is to be accomplished. In the words of one whom I hoped to see among us to-day, and whom as a boy I listened to at Cambridge, 'Difficulty, struggle, progress—this is the law.'"

"Make your study by observation. Following the rules of one writer, studying by the bedside of one practitioner, will only be enough to narrow your ideas, and cramp your progress. The sick recover with very different methods of treatment. You will learn more thoroughly by confining your observations to a single class of cases at a time, than by following the clinical visits of different physicians at the same time. You will obtain more useful knowledge by seeing the minor operations in surgery and the application of splints, than by crowd-

ing the amphitheatre to see the abdominal aorta tied. You will serve your patient better, if you can learn how to lift a lame leg, or compress the femoral artery, to reduce a hernia or get a grain of sand out of the eye, or teach some nurse how to make palatable gruel or a comfortable bed, than you will by naming accurately the ligaments of the cervical vertebræ, or counting and demonstrating the number of layers of fascia over a forty years' inguinal hernia. The little things are to be learned at the beginning, or they never will be learned. In the long days and evenings after the degree is attained, you will find time enough for the rest."

"Medicine is a science. It is based upon observation. He who is the most acute observer is the best practitioner. The collection of statistics will not make you acute observers. That is a useful part of the work, but by itself is of no value. Every sense must be cultivated, for the senses are not alike acute in all. One can tell by the eye, another by the touch, a third only by the tape, if the two sides of a chest expand alike. But he is the better observer who tries the three, and allows one to correct and conform the others. He is the best observer who can use one method, when the comfort and convenience of the patient will not allow the others."—C. E. Buckingham, M.D., 1868.

"The comprehensive and important position which our profession occupies has been reached by successive steps of unequal and hesitating progress. The general recognition of this fact cannot but stimulate effort, for on every side are still spread out uncultivated and fertile fields of study. It will be your duty to elevate your calling by more assiduous endeavors to improve yourselves. No faithful workman finds his task a pastime, but excellence of achievement may make it the source of pride and happiness. Exercising your own intelligence, making yourselves something more than the mere passive recipients of information, and by an elaboration independent of professional instruction converting that which you are taught into personal knowledge, you will acquire thorough training and preparation for a career than which none offers surer distinction or greater satisfaction."—R. M. Hodges, M.D., 1869.

"But whatever be the degree of perfection to which medical treatment may attain, its limitations are inevitable. Despite human efforts, death cometh to all by a divine decree. By a decree nearly as absolute disease cometh to all, and will continue to come while the earth lasts. The doctrine enunciated in this place, five years ago, that 'disease is a part of the plan of creation,' though at times assailed, has never been invalidated, and, better than any other statement, comprehends and explains the facts appertaining to human ailments. The primal causes of disease are manifold, hidden, and mysterious."—W. W. Wellington, M.D., 1870.

"The profession of the healing art, divine in its origin, grave and grand in its scientific evolution, sacred and sublime in its ultimate functions, stands as a necessary part of the order of things, old as humanity, and inseparable from its existence upon earth; for when did not man suffer, and when did not his brother try to relieve him?"—Dr. R. M. S. Jackson.

"The comfort and the happiness of many people, for good or ill, are in your hands. Weighty, then, indeed, is the responsibility which, of your own free will, you have this day assumed."

"In the remote infancy of medicine they who took the Hippocratic oath swore by Apollo, the physician, and Æsculapius, and Hygeia, and Panacea, with purity and with holiness to pass their lives and practise their art. And the Code of Ethics adopted by our Medical Congress strictly enjoins upon you the cultivation of purity of character, and a high standard of morality."—J. A. Meigs, M.D., 1870.

"I must conclude, but not without warning you (1) against one-sided views and unthinking routine; (2) against scepticism in Medicine. Do not think, however successful you may be in treating a disease as you see it, that your method is always and in all places a correct one. Think what a speck of time and space you occupy, and how well it may happen that elsewhere and at other times conditions may be modified, so that your experience seems to be contradicted. Again, do not lose faith in Medicine, but rather search out closely the conditions of its success. Diagnosis is, indeed, a great thing in Medicine, but it must not be such as contents itself with giving a name to a disease, but such as strives to appreciate wherein one case, or set of cases, differs from another."—C. Handfield Jones, M.B. Cantab. F.R S., in *Med. Times and Gazette.*

PRACTICAL INFORMATION.

The Medical School of Harvard University, North Grove Street. Most of the information desired by the student is given in the Announcement of the Course of Lectures issued by the Faculty of the School; a few items are repeated for ready reference and for the use of physicians who have expressed a desire to attend certain of the lectures.

The winter course of lectures commences on the first Wednesday in November (2d), and continues seventeen weeks. The summer session commences on the second Wednesday in March (13th), 1871. There are two examinations for medical degrees: the first on March 1st; the second on June 19th. The Medical Commencement is the second Wednesday in March (8th); the College Commencement is the fourth Tuesday in June. The requirements of graduation are extracted from the Statutes of the University:—

"Every candidate for the Degree of Doctor in Medicine must comply with the following conditions before being admitted to examination:—

"1. He shall satisfy the Executive Faculty that he is of good moral character, and has arrived at the age of twenty-one.

"2. He shall have attended two courses of lectures delivered at the Massachusetts Medical College by each of the Professors of the departments of Anatomy, Physiology, Chemistry, Materia Medica and Pharmacy, Morbid Anatomy, Midwifery, Surgery and Clinical Surgery, Clinical Medicine, and the Theory and Practice of Medicine; but if he shall have attended a similar course in any other College or University approved by the Executive Faculty, the same may be accepted in lieu of one of the courses above required.

"3. He shall have employed three years in his professional studies, under the direction of a regular practitioner of medicine. [Attendance upon the Summer School and one course of lectures delivered at the Massachusetts Medical College, entitles the student to a certificate of one year's study.]

"4. If he has not received a University education, he shall satisfy the Executive Faculty in respect to his knowledge of the Latin language and of Experimental Philosophy.

"5. He shall have given notice of his intention to the Dean of the Executive Faculty, four weeks previous to the day on which he presents himself for examination, and at the same time shall have delivered or transmitted to the Dean a dissertation, written by himself, on some subject connected with medicine.

"Those candidates who have at the Spring examination received from the corporation and overseers the final approbation, shall be admitted to the degree of Doctor in Medicine by the President of the University, at a public Commencement on the Wednesday next succeeding the day of examination. Those who may be approved at the Summer Examination shall receive their degrees and diplomas in Cambridge on Commencement Day" [June 27, 1871].

In order to give students the requisite time for attending the regular lectures, the complete course on Physiology, and other exercises of the Winter Course, many of the special lectures, recitations and demonstrations which have been offered in previous years, will be transferred to the Summer Term. The fees are as follows:—

Fees for Winter Course of Lectures,	$121.00
Fee for Graduation,	30.00
Demonstrator's Ticket (optional),	5.00
Matriculating Fee,	5.00
Fee for the Summer School,	100.00
Fee for the whole year,	200.00

Use of Library and attendance on Hospitals and Dispensary, free.

Daily Order of Lectures, 1870-71.

Hour.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
8 A.M.	M. G. Hosp.			M. G. Hosp.		
9 A.M.	Hodges.	City Hosp. (Med. Visit.)	Ellis.	White.	City Hosp. (Oph. Visit.)	Clarke.
10 A.M.	White.	Cheever. (Clin. Surg.)	Shattuck.	Jackson.	Surg. Visit.	Clin. Conf.
11 A.M.	Bigelow.	Shattuck.	Bigelow.	Bigelow.	Operations.	Bigelow. (M. G. Hosp.)
12 M.	Buckingham	Shattuck.	Buckingham	Bacon.	Holmes.	Operations.
1 P.M.	Holmes.	Holmes.	Holmes.	Holmes.	Edes.	Shattuck.
3½ P.M.	Lusk.	Lusk.	Edes.	Lusk.	Operations.	
4½ P.M.	Prac. Anat.	Prac. Anat.	Prac. Anat.	Prac. Anat.	Prac. Anat.	
5–6 P.M.	The Demonstrator will be present in the Dissecting Room every afternoon.					
	Eye and Ear Infirmary and Boston Dispensary, Tuesdays and Fridays, 9 o'clock.					

Information concerning the Summer School will be given by advertisement in this JOURNAL at a later day. Other information regarding the School will be given by

the Dean, Dr. Calvin Ellis, at his office, No. 114 Boylston St., between 2 and 3, P.M.

The Dental School of Harvard University, No. 50 Allen Street, corresponds in the times and in many of the lectures to those of the Medical School. The Dental students have the privilege of attending the lectures and other exercises of the Medical Department.

The Dental School enters upon its 3d winter of instruction with greatly increased facilities.

Since the last session, the house, No. 50 Allen Street, has been purchased and fitted up especially for its use.

For the accommodation of the mechanical department an excellent laboratory has been prepared with room for from 40 to 50 students, each having his own drawer with its lock and key. Ample arrangements have also been made for the full demonstration of the manufacture of mineral teeth.

On the same floor is a Lecture-room, capable of seating from 70 to 80 students.

The operative department, as heretofore, will be located in the Out-Patient rooms of the Massachusetts General Hospital.

This School offers superior advantages, in that, while the instruction will be no less thorough in those departments peculiar to dentistry, it gives the student unusual facilities for the study of Anatomy, Physiology, Surgery and Chemistry, as the Dental student pursues the same course in them as is required of the Medical student, and in common with him has free access to the Hospitals of the city, to the Dissecting Rooms, Library and Museum of the Medical College, and also to all the courses of University Lectures. These are special courses delivered by men eminent in their departments, and embrace a wide range of medical and collateral branches.

The Degree of Doctor of Dental Medicine may be conferred upon each candidate of adult age, of good moral character, who shall have pursued his professional studies three years under competent instructors and attended two full courses of Lectures in this institution; except that a certificate of attendance upon one course of Lectures in any respectable Dental or Medical College, or five years reputable practice, may be considered a substitute for the first course; provided such candidate maintain a thesis, and undergo an examination to the satisfaction of the Faculty, and convince the Professors of Operative and Mechanical Dentistry of his ability to meet satisfactorily the requirements of his art.

He must also deposit with the Dean, to be placed in the Museum of the College, a specimen of mechanical dentistry or of practical or pathological anatomy, prepared during the course under the eye of the instructor.

The Fees of the Dental Department are as follows:—

Matriculating Fee, - - -	$5·00
Full course of Lectures, including demonstrator's tickets, - -	110.00
For Graduation Fee, - - -	30.00

Daily Order of Lectures, 1870-1.

Hour.	Monday.	Tuesday.	Wednesday.	Thursday.	Friday.	Saturday.
9 A.M.	Hodges.	Hitchcock.	Laboratory Chandler.	Laboratory	Laboratory Ham.	Laboratory
10 A.M.	White.	Laboratory Keep.				Bigelow. M. G. Hosp. Operations.
11 A.M.	Bigelow.		Bigelow.	Bigelow.	Operations. City Hosp. Holmes.	
12 M.				Bacon.		
1 P.M.	Holmes.	Holmes.	Holmes.	Holmes.	Infirmary.	Infirmary.
3 P.M.	Infirmary.	Infirmary.	Infirmary. Clinic. Moffatt, Shepard or Hawes.	Infirmary.	Shepard.	
4½ P.M.	Moffatt.	Hawes.			{ Salmon or Bogue.	

The Demonstrator of Anatomy will be present in the Dissecting Room every afternoon.
The Demonstrator in Charge will be present in the Laboratory every forenoon, and in the Infirmary every afternoon.

Further information will be given by the Dean, Dr. N. C. Keep, at his office, No. 74 Boylston Street.

Massachusetts General Hospital, Blossom Street. Incorporated in 1811. B. S. Shaw, M.D., Resident Physician. 175 beds. Patients suffering from medical or surgical diseases are received from any part of the United States or the Provinces. In addition to the patients treated within the Hospital, about 6000 annually receive advice as out-patients. Students are admitted to the clinical visits of the Physicians on Monday and Thursday at 8 o'clock, and on Wednesday and Saturday at 9 o'clock; and to the surgical visits on Friday at 10 o'clock. Operations are performed in the amphitheatre before the class on Saturday at 11 o'clock. In January of each year two House Pupils are appointed in the Medical

and four in the Surgical department. They are selected from the students of the medical school, and enter on their duties in May.

The City Hospital, Harrison Avenue, corner of Concord Street. (South End cars from Scollay's Building.) Incorporated in 1864. L. A. CUTLER, Superintendent. 250 beds. For the use of patients resident in Boston. Students are admitted to the clinical visits of the Physicians on Tuesday at 9 o'clock; and to the surgical visits on Friday at 10 o'clock. An ophthalmic clinic is held by Dr. Williams on Monday, Wednesday and Friday at 9 o'clock; an aural clinic by Dr. Green on the same days and hour; and a clinic on Diseases of the Skin by Dr. Damon on Tuesday at 11 o'clock. The surgical out-patient department is open to students every morning from 10 to 11. Operations are performed in the amphitheatre before the class on Friday at 11 o'clock. In February of each year, three House Physicians, three House Surgeons and an Ophthalmic Externe are appointed by competitive examination. They enter on their duties in May.

Massachusetts Charitable Eye and Ear Infirmary, Charles Street, near Cambridge. Organized in 1826. Treats patients, resident in Massachusetts, making application for Diseases of the Eye and Ear. Five thousand patients are annually cared for at this institution. Students are allowed to attend the practice of the Surgeons on Tuesday and Friday throughout the year, from 9 to 11 o'clock. Operations generally at 10 o'clock. Physicians are received during the visiting hours on any day.

U. S. Marine Hospital, Chelsea. (Chelsea Ferry-boat, foot of Hanover Street.) A. B. BANCROFT, M.D., Superintendent. Receives all patients needing treatment from the merchant marine service at this port. Especial advantages are offered for the study of all those diseases to which sailors are liable. Students visit the Hospital every day at 9½ o'clock. The Superintendent appoints resident pupils who enter on their duties in April.

Boston Dispensary, Bennett Street, corner of Ash. (South End cars from Scollay's Building.) Founded in 1796. SAMUEL A. GREEN, M.D., Superintendent. During the year ending October 1, 1870, 16994 patients were treated at the Central Office, and 8934 by the District Physicians; in all, 25928 patients. Students attend the practice of the Physicians and Surgeons at the Central Office on Tuesday and Friday at 9 o'clock. Special departments are devoted to surgical diseases and aural surgery, and to diseases of women, of men and of children. In connection with the Dispensary, Dr. Knight will give private courses in auscultation and percussion as applied to the diagnosis of diseases of the chest, beginning in November. Dr. Blake will deliver a course of lectures on aural surgery in the surgical waiting room on Tuesday at 9 o'clock, beginning Nov. 8th. Cases of midwifery are supplied from the Dispensary districts to students of the third year, on application to the instructor in obstetrics.

The Children's Hospital, 1429 Washington Street. (South End cars.) Incorporated in 1869. 35 beds. Devoted to the medical and surgical care of children between the ages of two and twelve, resident in Boston and to those non-residents who pay a reasonable board. Visits can be made on proper application to the physician or surgeon in attendance.

Boylston Medical Society.—This society was incorporated by the Legislature of Massachusetts in 1823, for the purpose of promoting emulation and inquiry among the students at the Medical School connected with Harvard University. The immediate members are students attending the winter session of the school, and are elected at stated meetings of the society. It is presided over by a Physician, selected by the members. The meetings are held in the Library of the Medical College on Friday at 7½ o'clock. The officers of the Society are J. C. Warren, M.D., President; H. B. Bridge, Secretary.

MEDICAL LIBRARIES.

There are several extensive collections of books on medical subjects in Boston, which are accessible to students. In addition to those named below, many physicians have large and important libraries, particularly rich on certain subjects.

Public Library, Boylston Street, near Tremont, 160,000 volumes, of which 6,500 are medical. The library can be consulted by any person making application. Books can be taken from the library by any inhabitant (a limited stay in the city constitutes one such), on presentation of his library card. The card is given on application at the Library.

Boston Athenæum, Beacon Street, near Park, 90,000 volumes, 4,500 of which are medical. The privileges of this private

library can be enjoyed through friends who may be stockholders.

Library of the Massachusetts Medical College. A large library of standard books of reference and recent authorities is open to the student on the deposit of $5, to be returned to him when he shall cease to use the library and has returned all books loaned to him. The library room is open daily.

The Treadwell Library, at the Massachusetts General Hospital, Blossom Street, 5,000 volumes. This collection was the gift to the Hospital of the late Dr. Treadwell, of Salem. It is for the use of the officers of the Hospital, and may be consulted by others by special favor.

PRIZES.

The following prizes are offered for competition by physicians and students:

Boylston Medical Prize of one hundred and fifty dollars for a dissertation considered worthy of a prize on either of the following questions:

1. Criticisms on the recent opinion of a medical writer that the less serious Diseases of the Ear may be successfully treated by a well-qualified general practitioner, and the more serious affections by none.

2. Recent advances in the Pathology and Treatment of Cutaneous Disease.

Dissertations on these subjects must be transmitted, post-paid, accompanied by a sealed envelope containing name and address of author, to John Jeffries, M.D., Boston, *on or before the first Wednesday in April*, 1871.

The following are the questions proposed for 1872:

1. The Pathology of the Malignant and Semi-Malignant Growths.

The author of a dissertation on this subject, considered worthy of a prize, will be entitled to a premium of Two Hundred Dollars.

2. The Pathology and Treatment of Sunstroke.

The author of a dissertation on this subject, considered worthy of a prize, will be entitled to a premium of One Hundred and Fifty Dollars.

Dissertations on these subjects must be transmitted as above, on or before the first Wednesday in April, 1872.

Fiske Fund Prizes.—A Prize of One Hundred Dollars will be awarded for the best essay considered worthy on each or either of the following subjects:

Ununited Fractures; the conditions under which they occur and the most successful method of treatment.

Hydrate of Chloral; its physiological effects and therapeutical uses.

Essays must be sent to Dr. S. A. Arnold, Providence, R. I., with author's name in sealed envelope, on or before May 1, 1871.

Warren Prize.—The income of two thousand dollars for three years, will be awarded after February, 1871, to the author of the best original dissertation, considered worthy of a prize, "On some subject in Physiology, Surgery or Pathological Anatomy. The arbitrators to be the Medical Board of the Hospital."

Dissertations, accompanied with a sealed envelop, containing the name and address of the writer, must be sent on or before the 1st of February, 1871, to Dr. BENJ. S. SHAW, *Sup't Mass. Gen. Hospital, Boston.*

Boylston Medical Society Prize.—Two prizes, of thirty and twenty dollars respectively, will be awarded for the most approved dissertation considered worthy on a medical subject, to be selected by the author. Dissertations must be placed in the hands of the President of the Society on or before the 31st of January, together with a sealed envelope containing name and address of the author. Decision of the Committee to be announced at the last meeting of the Society in February.

Massachusetts Medical Society.—Admission of Members.—"No person shall hereafter become a member of the Massachusetts Medical Society, except upon examination by the Censors of said Society; and any person of good moral character, found to possess the qualifications prescribed by the rules and regulations of said Society, shall be admitted a fellow of said Society."*

The By-Laws of the Society referred to in the Special Law of the State are as follows:

"1. Any person may be admitted a member of the Massachusetts Medical Society, who shall have passed a satisfactory examination before a Board of Censors, as to his credentials, personal and medical qualifications, and character, and shall have signed the By-Laws.

"The candidate shall be a person of sound mind, and of good moral character; shall be not less than twenty-one years of age; shall have such an acquaintance with the Latin Language as is necessary for a good medical and surgical education; and shall

* Chapter 82, Massachusetts Laws, 1859.

have acquired the principles of geometry and experimental philosophy. He shall have studied three full years under the direction, and shall have attended the practice, of some respectable physician or physicians. He shall have attended two full courses of lectures on anatomy, physiology, chemistry, materia medica, midwifery, and the theory and practice of medicine and surgery.

"No person shall hereafter be admitted a member of the Society who professes to cure diseases by Spiritualism, Homœopathy or Thomsonianism.

"II. Candidates shall be examined, at any stated meeting of Censors, in each and all the branches mentioned in Article I. of the By-laws. If the examination be satisfactory to the major part of the Censors present, the candidate shall be admitted a Fellow; but, if unsatisfactory, he shall not be reëxamined by any Board of Censors in less than six months."*

The Censors of Suffolk District (who are empowered to act for the Society and to examine all those who have not a residence in some other district of the State) will meet at No. 15 Chestnut Street, Boston, on the day immediately succeeding the examination of the Medical Department of the University, and at other stated times as announced by advertisement. The Censors of the other Districts will meet at the same place and on the same day as the District Societies to which they belong.

List of Surgical Operations.

Among the operations expected this week, there will be performed at the

City Hospital, Friday, at 11 o'clock:

Extirpation of Testis.
Two operations for Cataract.
Trephining Skull for Epilepsy.
Tumor of Hand.

Massachusetts General Hospital, Saturday, at 11 o'clock:

Tumor of Parotid.
" " Humerus.
" " Neck.
" " Breast.
Hare Lip.
Necrosis of Leg.
" " Arm.
Amputation of Leg.
Plastic operation of Foot.

* A Digest of the Acts of the Commonwealth relating to the Massachusetts Medical Society, together with the By-Laws, &c. Boston: 1861.

Dislocation of the Jaw.—M. Clement, at a recent meeting of the Lyons Medical Society, related a case of bilateral dislocation of the jaw, which had been produced by muscular action, while the patient was examining his mouth in a mirror. Although the luxation had only existed an hour, he found on trying four times that its reduction was impossible by the usual procedure. He then with the end of his finger sought for the coronoid process, pushing the upper lip forcibly upwards, and pressing the coronoid backwards. The condyle reentered its cavity with the greatest facility, and the same procedure succeeded just as well on the other side. M. Gayet observed that in this dislocation, in which muscular action plays so great a part, we should always try to turn the patient's attention from our procedures. In fact, this is probably what occurred in the present case, the patient involuntarily contracting his muscles during the first attempts at reduction, while, on the finger being introduced into the mouth in search of the coronoid, his attention being diverted, the muscles readily yielded. He met with a similar case in which, after very painful efforts at reduction, the condyle suddenly returned to its cavity during an examination of the mouth.—*Lyon Médical*, Sept. 11.

Time of Appearance of Iritis.—Iritis occurs at every time in life. It often destroys the good result of an operation for cataract in the most advanced old age, and it is also observed in the newly-born. There are even recorded experiences which render possible the belief in an iritis occurring during fœtal life. The middle period of life, from the 21st to the 40th or 50th year, certainly furnishes the greatest percentage. This may be in part due to the greater frequency of traumatic influences and constitutional syphilis at this time of life. Sex seems to exercise no peculiar influence upon the mild or severe course of an iritis. Whether the left iris and irides of a dark color are more disposed to the affection, as some believe, is not yet sufficiently decided.—*Stellwag on the Eye.*

Chronic Bronchitis in Bright's Disease.—This is one of the most common complications of Bright's disease; so common that Rayer observed it in seven-eighths of his patients, and Wilks states it, from an extensive analysis of cases, to have been more universal than any other single symptom, albuminous urine alone excepted.

Medical Miscellany.

A Municipal Park.—Our attention has been called to the fact that on the 8th of the current month the voters of Boston are to decide whether or no they will have a Municipal Park. It is not for us to remind our citizens that this great boon can now be obtained at an expense far below that at which it can ever be reached in the future; that by furthering the plan contemplated by the present bill, a delightful pleasure ground will be secured, not only for Boston of the present, but for the widely extended city of the future; and that this and all similar public improvements add to the attractions and beauty, and so are consistent with a far seeing wisdom for the prosperity of a city. Our want of space obliges us to be very brief; but as conservators of the public health, we cannot fail to call the attention of the profession to the momentous interests for the good of the people which are involved in the present question. The vote is, shall we or shall we not have an additional breathing space for our city, which is so rapidly outgrowing its limits and increasing its population. Our medical men should not let the present opportunity slip without impressing on those with whom they are brought in contact the professional importance of the question at issue.

The Microscope Sub-stage Illumination.—A member of our Profession, who is already known as the inventor of the calliper micrometer, has introduced a new method of sub-stage illumination which it is desirable should be extensively known, not only on account of its simplicity and most remarkable efficiency, but also on account of its inexpensiveness. Dr. John Matthews does away entirely with the "condenser," and in place of it makes use of one of the achromatic objectives. It must be so mounted as to send the whole of its bundle of rays at angles varying with the requirements of any given case. He finds it best to work at angles varying from 25° to 65°. The cost of adaptation need not exceed 25s. The excellence of the invention lies in this, that the observer has thus at his command a bundle of achromatic rays, all in one azimuth, which he can throw accurately in any direction he pleases. It is not possible to complain of Dr. Matthews when he explains "definition" to be "the power of correct appreciation of light and shade in reference to form, structure, and color," or when he adds that "its completeness depends mainly upon the angle at which light is incident on or passes through an object, as well as upon the amount and quality of that light." He illustrates the principle by the fact that astronomers observe the moon in her phases instead of at the full, knowing that in the former case her surface has more of appreciable detail. His objection to the various stops and existent arrangements for what is called "oblique illumination" is, that the rays are either axial, and so throw no satisfactory shadow, or, if oblique, are mostly so in *every* azimuth, so that they must in a great degree neutralize the operation of each other. We can testify to the admirable results of Dr. Matthews's method.—*Med. Times and Gazette.*

Appointments.—At a recent meeting of the Trustees of the Massachusetts General Hospital, Dr. Edward B. Dalton was appointed a Visiting Physician.

Dr. Clarence J. Blake has been appointed one of the Surgeons to the Massachusetts Charitable Eye and Ear Infirmary.

We call attention to the proposition made by our Publishers, Messrs. David Clapp & Son, by which subscriptions to the Journal will be received either at the publication office, or by the Librarian of the Medical Library. The Journal is offered to students for the lecture season, delivered by mail or otherwise, for the sum of one dollar and twenty-five cents.

To Correspondents.—Communications accepted:—Case of Cholera Infantum.—Laws of the State regulating Admission to the Massachusetts Medical Society.—Chronic Synovitis treated by tapping the Joint and Painting the Knee with Tincture of Iodine.

Pamphlets Received.—Proceedings of the State Medical Association of Texas, held in the city of Houston, June 15, 1870, including Constitution and By-Laws. Pp. 48.—Ein Collegen-Gruss aus dem Reserve-Lazareth zu Wilbad, von Dr. Wilh. Theodor Renz, Königl. Badearzt.

Married,—In Washington, D. C., Oct. 20th, Dr. J. F. A. Adams, of Pittsfield, Mass., to Miss Annah E. N. Bailey, of Washington.

Died,—At Clarendon, Vt., Oct. 28th, Dr. Calvin Spencer, aged 70 years.

Deaths in sixteen Cities and Towns of Massachusetts for the week ending Oct. 29, 1870.

Cities and towns.	Total.	Prevalent Diseases. Consumption.	Typhoid Fever.
Boston	109	17	8
Charlestown	9	4	2
Worcester	16	2	1
Lowell	18	4	3
Milford	2	0	0
Chelsea	8	2	1
Cambridge	15	3	0
Salem	17	2	0
Lawrence	17	3	3
Springfield	2	0	2
Gloucester	3	0	0
Fitchburg	3	0	0
Taunton	7	2	2
Newburyport	5	1	0
Fall River	5	1	0
Holyoke.	7	0	0
	275	41	22

From all the above-named places there are reported thirteen deaths from pneumonia, ten from croup and diphtheria, ten from scarlet fever, ten from dysentery and diarrhœa, and nine from cholera infantum.

George Derby, M.D.,
Secretary of State Board of Health.

Deaths in Boston for the week ending Saturday, Oct. 29th, 109. Males, 59; females, 50. Accident, 1—apoplexy, 1—inflammation of bowels, 1—disease of the bowels, 1—bronchitis, 3—disease of the brain, 2—cholera infantum, 4—consumption, 17—convulsions, 5—croup, 1—cystitis, 1—debility, 3—diarrhœa, 6—dropsy, 2—dysentery, 1—exhaustion, 1—bilious fever, 1—scarlet fever, 6—typhoid fever, 8—disease of the heart, 3—infantile disease, 5—disease of the kidneys, 1—laryngitis, 1—disease of the liver, 1—congestion of the lungs, 3—inflammation of the lungs, 7—marasmus, 6—old age, 1—paralysis, 2—puerperal disease, 1—premature birth, 4—peritonitis, 1—rheumatism, 1—scrofula, 1—tumor, 1—unknown, 4—whooping cough, 1.

Under 5 years of age, 46—between 5 and 20 years, 15—between 20 and 40 years, 23—between 40 and 60 years, 12—above 60 years, 13. Born in the United States, 78—Ireland, 21—other places, 10.